

HOUSING UNIT ESTIMATES FOR HAWAII, 1980-1991

General findings

Hawaii's housing stock reached an estimated 398,325 units on April 1, 1991, according to an annual survey by the Hawaii State Department of Business, Economic Development & Tourism. During the preceding year, the total increased 8,515 units, or 2.2 percent. The increase since 1981 was 56,561 units, or 16.5 percent.

Homeownership rates, historically low in the Islands, rose only slightly during the decade, from 41.6 percent of the inventory in 1981 to 42.4 percent a decade later. The number of such units increased 18.8 percent over the ten-year period, compared with 15.0 percent for renter occupied or vacant units. Note, however, that these homeownership figures are based on persons claiming taxpayers' home exemptions; the decennial censuses give higher rates.

This relative stability in homeownership masks a significant shift in the ownership of the land beneath these owner occupied houses and apartments. Those on land owned in fee simple rose from 30.6 percent of the inventory in 1981 to 35.6 percent a decade afterwards, a 35.5 percent growth in the number of such units. Owner occupied units on leased land, in contrast, actually declined 28.1 percent, from 10.9 percent of all units at their 1981 peak to 6.8 percent in 1991. This shift in part reflects the conversion of single-family lots under the provisions of the State Land Reform Act of 1967. During fiscal 1990, the Housing Finance and Development Corporation assisted in the voluntary conversion of 867 Oahu lots. Since 1967, approximately 12,550 single-family leasehold residential lots have been converted to fee simple. 1/

Private renter occupied and vacant units continued to outnumber all other types, accounting for 50.8 percent of the total housing stock in both 1981 and 1991 and showing a ten-year increase of 16.5 percent. Units owned by the federal government, in contrast, dropped from 5.7 percent of the total to 4.9. Almost all of this federal housing was on military and naval bases. State- and county-owned units meanwhile increased by 20.2 percent, from 1.9 percent of total stock in 1981 to 2.0 percent in 1991.

Most of the housing units in Hawaii were on Oahu, both in 1991 and a decade earlier, but increases on the Neighbor Islands far outpaced those on Oahu. The City and County of Honolulu held 74.6 percent of the State's stock in 1981 and 71.5 percent in 1991. The ten-year increase amounted to 30.5 percent on the Neighbor Islands but only 11.8 percent on Oahu. Among the three nonmetropolitan counties, the Big Island recorded the most rapid growth, with 40.3 percent, followed by Maui at 26.9 percent and Kauai at 16.4 percent. (Kalawao, also termed a county, is a 13.2-square mile Hansen's Disease settlement on Molokai, which for statistical purposes is combined with Maui County.)

Many private rental units are condominium apartments in rental pools intended for tourist use. Such accommodations made up 5.0

percent of the housing stock in 1991, compared with 4.2 percent ten years earlier.

Definitions and methodology

The estimates reported here were based on the 1980 and 1990 housing censuses, annual building and demolition permit data from county building departments, and information supplied by government agencies providing housing, chiefly the armed forces and Hawaii Housing Authority.

The U.S. Bureau of the Census has defined a housing unit as a house, an apartment, a mobile home or boat, a group of rooms or a single room occupied as separate living quarters or, if vacant, intended for occupancy as separate living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from outside the building or through a common hall. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated persons who share living arrangements. Both occupied and vacant housing units are included in the housing unit inventory, except that recreational vehicles, boats, tents and the like are included only if they are occupied as someone's usual place of residence. 2/

Apparently the most ambiguous aspect of this definition is its treatment of condominium apartments intended or used primarily for tourist occupancy. Occupied rooms or suites of rooms in hotels, motels and similar places are classified as housing units only when occupied by permanent residents. Vacant rooms or suites of rooms are classified as housing units only in those hotels, motels, and similar places in which 75 percent or more of the accommodations are occupied by permanent residents. 3/ Most condominium units occupied by or held for nonresidents seem to have been included in the count, both in 1980 and 1990, although the exact comparability of the two censuses in this matter has been disputed. Further discussion of this point appears in the official letters from Bureau of the Census officials appended to the present report.

Annual changes since 1980 in the stock of private housing were estimated from building and demolition permit figures supplied by county building departments, as lagged to reflect the average interval between issuance of permit and completion of construction or razing, and from transfers to or from government ownership. It was assumed that nine months elapsed, on the average, between the authorization and completion dates of a structure with three or more housing units. For one- or two-unit structures and all demolitions, a three-month lag was assumed. Although these lags may be unrealistically short for the large single-family subdivisions and high-rise apartments that have made up a large part of the construction booms of the 1970s and 1980s, lengthening them would have a relatively modest effect on the annual totals for the housing inventory. The annual changes in government housing units were obtained from the agencies in charge of such units and reflected actual rather than assumed completion dates.

These data on the reported components of change in the private and public inventory indicated a Statewide net intercensal (1980-1990) increase of 68,409 housing units, compared with an actual growth (as shown by the census) of 55,575. It should further be noted that annual counts of the standing government inventory indicated a 12-month, 1990-1991 net increase of 656 units while data submitted on the components of change added to a net gain of 566 government units.

All 1981-1989 estimates reported here have been revised in the light of the 1990 census. The previously calculated postcensal estimates were adjusted by a formula adapted from one used by the Bureau of the Census in intercensal population estimation and cited at the end of the present report. 4/

As noted earlier, the annual estimates of homeownership, separately for units on owned and leased land, were taken from real property taxation statistics on persons claiming taxpayers' home exemption. Although these totals might reasonably be expected to lie close to the decennial housing census statistics on owner occupied units -- the two series, after all, are almost identically defined -- such is surprisingly not the case. In 1990, for example, the real property records indicated a State total of only 167,567 homeowners, just 87.3 percent of the number (191,911) indicated by the decennial census. The latter ratio also varied by counties, from 78.3 percent in Maui County to 89.0 percent on Oahu. Earlier censuses moreover revealed similar discrepancies (see table 9). These variations are especially surprising in view of the sizable tax savings to be realized by claiming the exemption; any differences, obviously, should be expected to fall in the opposite direction. Although census officials strongly support the accuracy of the census count, the present study uses the tax-based data, partly because of their annual availability and partly because this source, unlike the decennial census, disaggregates owner occupied units on land owned in fee simple from those on leased land.

A second question on data reliability relates to the accuracy of the annual counts of resort condominium units. The series cited in the present report is taken from the Hawaii Visitors Bureau's Visitor Plant Inventory, conducted annually beginning in February. The HVB statistics have regularly provided separate totals for condominium units in rental pools for tourist occupancy, and beginning in 1990 have moreover shown separate figures for "condos" and "hotel/condos." (The pre-1990 data apparently combined the two categories.) Unfortunately, the HVB survey has seemingly varied rather widely from year to year in completeness and accuracy. It is moreover unclear as to how fully these units are represented in the 1980 and 1990 housing censuses and the building permit data used in the postcensal and intercensal housing stock estimates. A rough check is available from the census count of "vacant units for seasonal, recreational, or occasional use," which includes any such accommodations occupied by nonresidents. The 1990 Statewide count of such units was only 12,806, well below the HVB condo and hotel/condo total of 19,179 (see table 10).

Detailed statistics appear in the following tables. Table 1 presents annual estimates of the total housing inventory, 1980-1991, corresponding data from the Honolulu Department of Finance real property records (which provide Statewide coverage) on owner occupied units, and data from government agencies on units in public ownership. Annual intercensal and postcensal estimates of total units by counties appear in table 2. Table 3 contains figures from the Hawaii Visitors Bureau on condominium units in rental pools for transient use, and also on the remainder of the housing stock, by counties. Estimates for 1980, 1990, and 1991, by tenure and control by county, are given in table 4. Table 5 presents building permit statistics by counties, and table 6 contains data on the components of change in the inventory. Government units are tabulated for the past two years in tables 7 and 8. Tables 9 and 10, previously cited, compare decennial census data with statistics from alternate sources.

The present estimates were made as part of an annual review of changes in the housing supply in Hawaii, initiated early in 1954 and extended at that time back to 1940. 5/ In the past decade, these estimates have been prepared by the Hawaii State Department of Business, Economic Development & Tourism and its predecessor agencies, primarily from data provided by the armed forces, county building departments, Hawaii Housing Authority, and other federal, state and county agencies. The assistance of these agencies is gratefully acknowledged.

Footnotes

1/ Housing Finance and Development Corporation, Fiscal Year 1990 Annual Report, p. 19.

2/ U.S. Bureau of the Census, 1990 Census of Population and Housing, Summary Population and Housing Characteristics, Hawaii, 1990 CPH-1-13 (August 1991), p. B-14.

3/ Ibid., p. B-15.

4/ The unrevised postcensal estimates appeared in DBED Statistical Report 217, "Housing Unit Estimates for Hawaii, 1980-1990," August 1990. The intercensal estimation formula appeared in U.S. Bureau of the Census, Release CB91-289 (October 1, 1991), App. 1, which is reproduced at the end of the present report.

5/ For revised data for earlier years, see the Honolulu Redevelopment Agency, "Intercensal Estimates of Dwelling Units, 1940-1960," Redevelopment and Housing Research, No. 24, July 1964, pp. 23-31, and "Intercensal Estimates of Housing Units, 1960-1970," Redevelopment and Housing Research, No. 31, July 1971, pp. 13-17; DPED Statistical Report 156, "Housing Unit Estimates for Hawaii, 1970-1982," July 28, 1982; and Robert C. Schmitt, Historical Statistics of Hawaii (University Press of Hawaii, 1977), tables 15.5 and 15.7.

Table 1
TENURE AND CONTROL OF HOUSING UNITS:
ANNUALLY, 1980 TO 1991

[Data include condominium units occupied or intended for occupancy by nonresidents]

State and County 1/	Year	Owner occupied units 2/			Renter occupied and vacant	
		All housing units 1/	Land owned	Land leased	Private 3/	Federal 1/
1980		334,235	100,478	36,986	170,963	19,437
6,371	1981	341,764	104,677	37,413	173,644	19,427
6,603	1982	346,726	106,147	37,372	177,325	19,392
6,490	1983	349,996	108,761	35,586	179,831	19,304
6,514	1984	354,484	111,767	35,545	181,034	19,294
6,844	1985	358,581	114,548	35,681	182,050	19,280
7,022	1986	363,416	117,090	35,811	184,343	19,264
6,908	1987	369,425	121,019	35,959	186,109	19,265
7,073	1988	375,434	126,563	33,579	188,851	19,394
7,047	1989	382,052	132,691	30,996	191,657	19,421
7,287	1990	389,810	138,520	29,047	195,601	19,245
7,397	1991	398,325	141,846	26,915	202,266	19,358
7,940						

1/ As of April 1.

2/ As indicated by the number of taxpayers claiming home exemptions as of

January 1. The number of owner-occupied housing units reported by the U.S.

Census of Housing is somewhat higher than the corresponding number based on taxpayer home exemptions, chiefly because of differences in definitions.

3/ Calculated as a residual after accounting for the known components, some of which pertain to dates other than April 1, and thus not attributable to any specific date.

Source: Present study.

Table 2
HOUSING UNITS STANDING, BY COUNTIES:
ANNUALLY, 1980 TO 1991

[As of April 1. Data include condominium units occupied or intended for occupancy
by nonresidents]

Maui	Year	State total	City and County of Honolulu	Total	Other counties	
					Hawaii	Kauai
1980		334,235	252,038	82,197	34,215	14,828
33,154						
1981		341,764	254,815	86,949	36,041	16,021
34,887						
1982		346,726	256,689	90,037	37,453	16,476
36,108						
1983		349,996	259,149	90,847	38,264	16,044
36,539						
1984		354,484	262,337	92,147	39,164	16,318
36,665						
1985		358,581	265,412	93,169	40,054	16,428
36,687						
1986		363,416	268,551	94,865	41,006	16,556
37,303						
1987		369,425	272,134	97,291	42,022	16,690
38,579						
1988		375,434	275,520	99,914	43,397	16,871
39,646						
1989		382,052	278,191	103,861	45,520	17,173
41,168						
1990		389,810	281,683	108,127	48,253	17,613
42,261						
1991		398,325	284,835	113,490	50,579	18,649
44,262						

Source: Present study.

Table 3
RESIDENT AND NONRESIDENT HOUSING UNITS, BY
COUNTIES: ANNUALLY, 1980 TO 1991

Maui	Category and year	State total	City & County of Honolulu	Total	Other counties	
					Hawaii	Kauai
	RESIDENT 1/					
1980		322,598	247,152	75,446	33,594	13,395
28,457						
1981		327,570	249,176	78,394	34,782	14,165
29,447						

1982	332,326	251,002	81,324	35,969	14,797
30,558					
1983	336,583	254,402	82,181	36,495	15,038
30,648					
1984	336,882	255,450	81,432	37,262	14,720
29,450					
1985	336,777	256,396	80,381	37,775	14,352
28,254					
1986	340,417	258,713	81,704	38,954	13,982
28,768					
1987	347,529	262,898	84,631	39,920	14,059
30,652					
1988	354,314	267,885	86,429	41,043	14,016
31,370					
1989	362,912	272,272	90,640	43,502	14,139
32,999					
1990	370,631	276,567	94,064	46,138	15,047
32,879					
1991	378,257	280,116	98,141	48,178	16,114
33,849					

NONRESIDENT 2/

1980	11,637	4,886	6,751	621	1,433
4,697					
1981	14,194	5,639	8,555	1,259	1,856
5,440					
1982	14,400	5,687	8,713	1,484	1,679
5,550					
1983	13,413	4,747	8,666	1,769	1,006
5,891					
1984	17,602	6,887	10,715	1,902	1,598
7,215					
1985	21,804	9,016	12,788	2,279	2,076
8,433					
1986	22,999	9,838	13,161	2,052	2,574
8,535					
1987	21,896	9,236	12,660	2,102	2,631
7,927					
1988	21,120	7,635	13,485	2,354	2,855
8,276					
1989	19,140	5,919	13,221	2,018	3,034
8,169					
1990	19,179	5,116	14,063	2,115	2,566
9,382					
1991	20,068	4,719	15,349	2,401	2,535
10,413					

1/ Estimated as of April 1. Includes all housing units other than condominium

units in rental pools and intended for transient occupancy.

2/ Condominium units in rental pools and intended for transient occupancy, based

on February survey data from the Hawaii Visitors Bureau.

Source: Present study.

Table 4
TENURE AND CONTROL OF HOUSING, BY COUNTIES:
1980, 1990, AND 1991

[Condominium units occupied by nonresidents are included in these estimates]

and State and Year and county County 1/	All housing units 1/	Owner occupied units 2/		Renter occupied vacant units	
		Land owned	Land leased	Private 3/	Federal 1/
1980					
State total 6,371	334,235	100,478	36,986	170,963	19,437
City & Co. of Honolulu 4,869	252,038	69,147	35,278	123,454	19,290
County of Hawaii 892	34,215	15,111	964	17,191	57
County of Kauai 254	14,828	5,551	126	8,833	64
County of Maui 4/ 356	33,154	10,669	618	21,485	26
1990					
State total 7,397	389,810	138,520	29,047	195,601	19,245
City & Co. of Honolulu 5,501	281,683	96,304	26,498	134,257	19,123
County of Hawaii 1,143	48,253	20,475	1,277	25,310	48
County of Kauai 325	17,613	7,705	357	9,161	65
County of Maui 4/ 428	42,261	14,036	915	26,873	9
1991					
State total 7,940	398,325	141,846	26,915	202,266	19,358
City & Co. of Honolulu 5,839	284,835	98,271	24,284	137,162	19,279
County of Hawaii 1,156	50,579	21,101	1,287	27,027	8

County of Kauai	18,649	8,045	375	9,840	65
324					
County of Maui 4/	44,262	14,429	969	28,237	6
621					

1/ As of April 1.

2/ As of January 1. Based on the number of taxpayers claiming home exemptions, rather than on the census tabulations on tenure.

3/ Calculated as a residual and not attributable to any specific month.

4/ Includes Kalawao County (121 units in 1980, 114 units in 1990 and 1991).

Source: Present study.

Table 5
PRIVATE RESIDENTIAL CONSTRUCTION AND
DEMOLITION AUTHORIZED BY PERMITS, BY
COUNTIES: 1986 TO 1990

Category & year authorized	State total	City and County of Honolulu	Total	Other counties		
				Hawaii	Kauai	Maui
New 1-family dwellings:						
1986	4,985	2,024	2,961	1,127	417	1,417
1987	5,813	2,684	3,129	1,391	543	1,195
1988	6,067	2,001	4,066	1,715	692	1,659
1989	6,846	2,026	4,820	2,782	856	1,182
1990	5,529	1,593	3,936	2,023	845	1,068
New duplex units:						
1986	166	112	54	18	2	34
1987	182	124	58	50	6	2
1988	205	172	33	28	5	-
1989	219	124	95	63	12	20
1990	260	136	124	50	14	60
New apartments:						
1986	2,570	2,076	494	22	-	472
1987	1,671	785	886	314	-	572
1988	2,802	1,377	1,425	446	21	958
1989	2,618	1,852	766	59	5	702
1990	2,862	1,210	1,652	580	324	748
Units demolished: 1/						
1986	690	534	156	43	60	53
1987	825	741	84	40	2	42
1988	753	629	124	57	9	58
1989	864	690	174	96	4	74
1990	1,073	944	129	54	22	53

1/ Excludes units destroyed by fire, volcanic activity, high winds, and other disasters.

Source: Compiled from County building departments by the Hawaii State Department of Business, Economic Development & Tourism.

Table 6
COMPONENTS OF CHANGE IN THE HOUSING
INVENTORY, BY CONTROL AND COUNTY:
APRIL 1, 1990 TO MARCH 31, 1991

New housing units built						
Housing units trans- County and control ferred 2/	In 1-unit struc- tures	In 2-unit struc- tures	In multi- unit struc- tures	Housing units con- verted 1/	Housing units demol- ished	
State total	5,995	270	3,230	+38	1,108	
-						
City and County of Honolulu	1,961	136	2,021	(NA)	972	
-						
Private 3/ +342	1,593	136	1,531	(NA)	944	
Armed forces	-	-	156	-	-	
-						
Education	-	-	-	-	2	
-						
HFDC	-	-	-	-	-	
-						
Land & Natural Resources	-	-	-	-	7	
-						
Hon. DHCD 342	368	-	334	-	19	-
Hawaii County	2,062	54	320	+14	54	
-						
Private 3/	2,023	50	320	+14	54	
-						
HHA (Teachers' housing)	-	4	-	-	-	
-						
Hawaii Co. DHCD	39	-	-	-	-	
-						
Kauai County	859	14	164	+24	22	
-						
Private 3/ +12	845	14	164	+24	22	
Health	1	-	-	-	-	
-						
Kauai Housing Agency 12	13	-	-	-	-	-
Maui County	1,113	66	725	(NA)	60	
-						

Private 3/ +11	1,068	60	725	(NA)	53	
HHA (Teachers' housing)	3	6	-	-	7	
-						
Maui Housing Division 11	42	-	-	-	-	-

NA Not available.

1/ Number added less number deleted.

2/ Net gain (+) or loss (-) by purchase, sale, donation, or lease.

There

were units in interagency transfer in which the receiving agency was not identified.

3/ Based on building permit data, allowing nine months for completion of

units in multi-unit structures and three months for all other activity.

Source: Present study.

Table 7
HOUSING UNITS OWNED BY GOVERNMENT AGENCIES,
BY COUNTIES: APRIL 1, 1990

[Revised]

Maui County	Government unit or type of housing	State total	City and County of Honolulu	Hawaii County	Kalawao County	Kauai County
323	All agencies	26,642	24,624	1,191	114	390
9	Federal government	19,245	19,123	48	-	65
6	Armed forces	19,199	19,116	15	-	62
-	Oahu Consol. Fam. Hsg. Office	18,828	18,825	3	-	-
6	Coast Guard	315	291	12	-	6
-	Navy	56	-	-	-	56
3	Civilian agencies	46	7	33	-	3
-	Fish & Wildlife Service	5	2	-	-	3
3	National Park Service	36	-	33	-	-
-	National Weather Service	5	5	-	-	-
189	State government	6,729	5,009	1,093	114	324

-	Education	3	3	-	-	-
-	Hawaii Housing Authority:					
142	Rental 1/	6,360	4,864	1,058	-	296
16	Teachers housing	21	-	5	-	-
16	Health	160	10	15	114	5
11	Land & Natural Resources	90	48	9	-	22
3	Transportation	6	3	-	-	-
1	University of Hawaii	89	81	6	-	1
125	County government	668	492	50	-	1

1/ Includes 637 units owned by the Housing Finance and Development Corporation but managed by HHA.

Source: Hawaii State Department of Business, Economic Development & Tourism, survey of government agencies.

Table 8
HOUSING UNITS OWNED BY GOVERNMENT AGENCIES,
BY COUNTIES: APRIL 1, 1991

Government unit	State total	City and County of Honolulu	Hawaii County	Kalawao County	Kauai County	Maui County
All agencies	27,298	25,118	1,164	114	389	513
Federal government	19,358	19,279	8	-	65	6
Armed forces	19,358	19,272	8	-	62	6
Oahu Consol. Family Housing Office	18,984	18,981	3	-	-	-
Coast Guard	308	291	5	-	6	6
Navy	56	-	-	-	56	-
Civilian agencies	10	7	-	-	3	-
Fish & Wildlife Service	5	2	-	-	3	-
National Weather Service	5	5	-	-	-	-
State government	6,922	5,007	1,096	114	322	383
Education	3	3	-	-	-	-
Hawaii Housing Authority:						
Rental 1/	5,926	4,792	699	-	293	142
Teachers housing	34	-	9	-	-	25
HFDC 1/	614	72	358	-	-	184
Health	162	10	15	114	6	17
Land & Natural Resources	90	48	9	-	22	11

Transportation	4	1	-	-	-	3
University of Hawaii	89	81	6	-	1	1
County government	1,018	832	60	-	2	124

1/ Units owned by HFDC but operated by HHA are included in the HFDC totals.

Source: Hawaii State Department of Business, Economic Development & Tourism,
survey of government agencies.

Table 9
OWNER OCCUPIED HOUSING UNITS BASED ON CENSUS
AND REAL PROPERTY DATA,
BY COUNTIES: 1950 TO 1990

Source and county	1950	1960	1970	1980
1990				
TAXPAYER HOME EXEMPTIONS				
State total	31,875	56,045	89,224	137,464
167,567				
Honolulu	23,435	41,472	68,672	104,425
122,802				
Hawaii	4,275	6,553	9,547	16,075
21,752				
Kauai	1,543	2,851	3,583	5,677
8,062				
Maui	2,622	5,169	7,422	11,287
14,951				
CENSUS COUNT				
State total	37,025	62,937	95,271	151,954
191,911				
Honolulu	27,512	47,810	74,184	114,831
137,910				
Hawaii	5,365	7,109	9,815	17,731
25,336				
Kauai	1,598	2,880	3,788	6,429
9,582				
Maui	2,550	5,138	7,484	12,963
19,083				
EXEMPTIONS AS PERCENT OF CENSUS COUNT				
State total	86.1	89.0	93.7	90.5
87.3				
Honolulu	85.2	86.7	92.6	90.9
89.0				
Hawaii	79.7	92.2	97.3	90.7
85.9				

	Kauai	96.6	99.0	94.6	88.3
84.1					
	Maui	102.8	100.6	99.2	87.1
78.3					

Source: U.S. Bureau of the Census, U.S. Census of Housing, 1950-1990; Hawaii State Department of Taxation data cited in the Honolulu Redevelopment Agency, Redevelopment and Housing Research, No 33, July 1973, pp. 15-17; data from Hawaii State Department of Taxation and Honolulu Department of Finance, Real Property Assessment Division, cited in Hawaii State Department of Business, Economic Development & Tourism, Housing Unit Estimates for Hawaii (annual Statistical Report, 1980-1990).

Table 10
NONRESIDENT HOUSING UNITS, BY COUNTIES:
1980 AND 1990

	Source and year	State total	Honolulu	Hawaii	Kauai
Maui					
	Decennial census:				
	1980 1/	6,431	3,483	1,114	602
1,232					
	1990 2/	12,806	4,462	2,045	333
5,966					
	Hawaii Visitors Bureau:				
	1980 (condo) 3/	11,637	4,886	621	1,433
4,697					
	1990, total 4/	19,179	5,116	2,115	2,566
9,382					
	Condominiums	18,938	4,975	2,015	2,566
9,382					
	Condo/hotel	241	141	100	-
-					

1/ Vacant seasonal or migratory units (2,022 Statewide) and vacant units held for occasional use (4,409). All units occupied by nonresidents were classified as vacant. As of April 1, 1980. From U.S. Bureau of the Census, 1980 Census of Housing, General Housing Characteristics, Hawaii, HC80-1-A13 (July 1982), tables 5 and 46.

2/ Vacant units for seasonal, recreational, or occasional use. As of April 1, 1990. From U.S. Bureau of the Census, 1990 Census of Population and Housing, Summary Population and Housing Characteristics, Hawaii, 1990 CPH-1-13

(August 1991), table 8.

3/ Condo units in rental pools. As of February 1980, Hawaii Visitors Bureau Visitor Plant Inventory, February 1980.

4/ Condo units in rental pools. Mostly as of February 1990, but with many units reporting later, some in October. From Hawaii Visitors Bureau, 1990 Visitor Plant Inventory, as corrected.

Sources cited in footnotes.